SOIL CONSERVATION SERVICE

WEST VIRGINIA

WILDLIFE WETLAND HABITAT MANAGEMENT (ACRE)

STANDARD

Definition

Retaining, creating, or managing wetland habitat for wildlife.

Purpose

To keep, make, or improve habitat for waterfowl, furbearers, or other wildlife.

Conditions Where Practice Applies

On wetland and areas where water can be impounded or regulated by diking, ditching, or flooding.

Planning Considerations

A diverse wetland with a mixture of aquatic plants and areas of open water will benefit many species of wildlife other than just waterfowl. As most of West Virginia is far removed from primary waterfowl migration routes, the following specifications are designed to facilitate the development and maintenance of wetlands which will provide habitat for a variety of wildlife species including waterfowl and other types of fauna indiginous to the state except as specified, e.g. duck fields.

DESIGN CRITERIA

I. MAINTENANCE AND IMPROVEMENT OF EXISTING WETLANDS

WET MEADOWS, MARSHES, AND SHRUB SWAMPS

A. Size and Depth
Wetlands must be at least 0.25 acres in size with a minimum of 25 percent (50 percent maximum) in open water that is 3 feet deep or deeper. Open water can be created in the following ways:

1. Develop potholes
   a. Potholes can be created by excavating or blasting. Landowners will need to obtain a license to blast or hire a licensed contractor to perform the required work.

   b. Potholes shall be no less than 25 feet in diameter and will be at least 4' in depth. Side slopes must be stable.

   c. Potholes will generally be spaced at 100 feet intervals.

2. Construct level ditches
   a. Ditches are appropriate in areas having a high water table.

b. Ditches must be not less than 100 feet in length, 12 feet in width and 3 feet in depth. Side slopes shall be no steeper than 2 to 1.

c. Ditches should be constructed at right angles to the natural drainage. Blocks of land must be left to separate the ditch from the natural drain.

d. Zig-zag ditches at a 20-30 degree angle every 100 feet. Ditches should be randomly spaced at a minimum distance of 100' and a maximum distance of 200'.

B. Nesting Areas

a. At least 50 percent of the wetland edge should be maintained in grasses and legumes. The grass/legume strip should be at least 50 feet in width, not to exceed 300 feet.

b. Wood ducks require that land adjacent to 50 percent of the wetland be in pole or mature timber.

c. Nest boxes will be necessary for wood ducks if natural nesting cavities are not available. Nest boxes should be placed 5 feet above the water or at least 10 feet above ground level.

d. Nesting islands may be constructed to provide quality nesting sites. Specifications for islands are listed in Biology Field Letter No. 1. (Nesting islands can also be constructed in livestock water impoundments and fish ponds.) This is basic to the development of a resident goose population in West Virginia. Two nesting islands per acre of open water are sufficient.

C. Protection and Maintenance

Exclude livestock from wetlands and adjacent nesting areas. Protect from toxic pollutants and prevent drainage or diversion of water.

Herbaceous vegetation nesting areas should be mowed at least once per year after July 15 to prevent encroachment of woody plants. Eliminate any trees and shrubs which become established on nesting islands.

II. CONSTRUCTION OF SHALLOW WATER AREAS

IMPOUNDED WETLANDS

Wetlands can be created by constructing a low dam or dike across a natural drainageway.

A. Water Supply
The drainage area of the watershed must be sufficient to maintain desired water depth.

B. Size and Depth
Wetlands must have a minimal area of 0.25 acres. The maximum depth will be six feet with a minimum of 50 to 75 percent of the area having a depth of less than 3 feet.

C. Water Control Structures
One of the following types of control structures which will permit drainage of at least 85 percent of the stored water and will automatically remove excess rainfall and maintain the normal water surface elevation will be utilized:

1. A weir type structure equipped with removable flash boards.

2. A horizontal pipe with a riser equipped with flash boards.

3. A riser equipped with a manually controllable gate, elbow or valve, or

4. Any similar device which will permit controlled manipulation of the water level.

D. Design
The impoundment will be constructed in accordance with Section 520 Subpart C, National Engineering Manual.

E. Nesting Areas, Nesting Islands, Protection and Maintenance
As per I-B and I-C.

F. Vegetation
Native hydrophytes will naturally seed into wetland areas. Grain and seed crops can be planted if desired. (See Duck Fields).

EXCAVATED WETLANDS

Wetlands can be created by excavating shallow depressions in flood plain areas or areas having a high water table.

A. Water Supply
Pumping water from an outside source may be necessary to ensure maintenance of wetland during dry periods. Diverting surface flow from adjacent areas into the wetland will also serve to augment water level.

B. Size and Depth
Minimum size of an excavated wetland will be one-eighth acre. Multiple pools are desirable for best results. Maximum depth will be 4 feet with side slopes of 5:1 along at least one half of the excavation to a depth of 2 feet.

C. Nesting Areas, Nesting Islands, and Protection
As per I-B and I-C. If periodic flooding is expected around the excavation, pile the excavated spoil along one or two sides to an elevation exceeding expected flood levels to facilitate safe nesting.

D. Vegetation
Vegetation will be permitted to seed in naturally.

E. Maintenance
Excavated wetlands may require periodic reconstruction.

DUCK FIELDS

A duck field is entirely surrounded by a dike or a combination of dike and diversion and has no drainage or runoff discharging into it.

A. Water Supply
The supply must be adequate to flood the field within 10 days and maintain the desired water level. The supply may be provided by pumping from a water storage reservoir or stream.

B. Size and Depth
The water surface area shall be at least one acre in size. The impoundment will be designed so that at least 75 percent and ideally 100 percent of the area has a depth of 18 inches or less.

C. Water Control Structure
The structure will have a control structure with flashboards as described in A-3.

D. Design
The water control structure will be designed to automatically remove excess rainfall and maintain the desired water level when flooded. The bottom of the impoundment will be graded essentially level with a slight positive drainage to ensure rapid drying prior to planting.

E. Vegetation Establishment
Duck fields are planted to grain and seed crops. Areas to be seeded should be drained in time for seeding by June 15 - July 15. Broadcast or drill 25 pounds of either Japanese or browntop millet per acre. Apply lime and fertilizer as per University soil test and prepare the seedbed as described in Standard and Specification 512, Pasture and Hayland Planting.

F. Protection and Maintenance
As per I-C

III. REPORTING PRACTICE

Wetland area and surrounding nesting and buffer zones will be reported under the Wildlife Wetland Habitat Management practice.

OPERATIONS AND MAINTENANCE

Operation and maintenance plans will provide for inspection, water level manipulation, vegetation management, and maintenance of pipes, spillways and other parts of the system.

SPECIFICATIONS

Plans for managing wildlife wetland habitat shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve desired results.

Construction specification shall be from individual standards, NEH-20 or the West Virginia 700 series as appropriate.

Planning considerations for water quantity and quality

Quantity

1. Effects on the water budget , especially on volumes and rates of runoff, infiltration, evaporation, transpiration, deep percolation, and ground water recharge.

2. Effects on the volume of downstream flow or charge to aquifers that might cause undesirable environmental, social, or economic effects.

3. Potential for a change in plant growth and transpiration because of changes in the volume of soil water.

Quality

1. Effects on erosion and the movement of sediment , and soluble and sediment-attached substances carried by runoff.

2. Effects of nutrients and pesticides on surface and ground water quality.

3. Effects on the movement of dissolved substances below the root zone and to ground water.

4. Effects on temperatures of water resources to allow for the enhancement or protection of aquatic and wildlife communities.

5. Effects on wetlands or water-related wildlife habitats.